

in the parenchyma of the endoderm, and at once enter into communication with them.

This parenchyma, or the whole non-epithelial cell-mass of the sponge, has essentially the same structure as in the larva; the rounded or stellate cells are suspended, by means of their mutual attachments, in a fluid, which at first also occupied the great endodermal cavity and its processes, but afterwards becomes somewhat condensed within the tissue, while, in the cavities which open outwards, it is displaced by water. The *spicules*, which always originate intracellularly, are also already present in the larva.

A brief recapitulation of the described facts shows that—

1. The bilamellar embryo is a sterrogastrula, which afterwards acquires an endodermal cavity.

2. The ectoderm entirely disappears during the attachment of the larva; the future sponge, with all its parts, proceeds entirely from the endoderm.

3. This early divides into a peripheral layer, which becomes an epidermis in place of the ectoderm, and a compact interior mass, the foundation of all the other tissues.

4. In the latter the incurrent and exhalent cavities and the flagellate chambers, as well as their linings, originate separately without any common foundation, so that the distinction of an enteroderm from a mesoderm is not possible.

5. The *Spongillæ*, as indeed all the sponges, originate from "bilamellar" ancestors; but at present develop their whole organization from a single germ-plate.—*Zoologischer Anzeiger*, December 15, 1884, p. 676.

#### *Note on the Reproduction of the Monotremata.*

*To the Editors of the Annals and Magazine of Natural History.*

GENTLEMEN,—*A propos* of Sir Richard Owen's paper in the Ann. & Mag. Nat. Hist. for December last "On the Impregnated Uterus and on the Uterine Ova of *Echidna hystrix*," accompanied by a copy of a letter from the 'Sydney Herald' announcing Mr. Caldwell's most interesting confirmation of Owen's researches by anatomical proof of the oviparous reproduction of the Monotremata, I beg to send you the following extract from the 'Illustrated Melbourne Post' of September 24, 1864, which was reproduced in the 'Zoologist' for 1865, p. 9431:—

#### *"Eggs of Ornithorhynchus.*

"About ten months ago a platypus (*Ornithorhynchus paradoxus*) was captured, and is in possession of Mr. Rumley, gold-receiver, of Woods Point. It has laid two eggs, which were white, soft, and without shell. It is to be regretted that no opportunity was afforded

of examining them more minutely, as they were soon afterwards thrown away. It has hitherto been a matter of dispute among naturalists as to whether this extraordinary animal, the connecting-link between birds and mammals, produced living young or whether it laid eggs. It may now, however, be considered as a settled question. [Valeat quantum! E. N.]”

THOMAS SOUTHWELL.

Norwich,  
December 5, 1884.

*A Scorpion from the Silurian Formation of Sweden.*

By Dr. G. LINDBSTRÖM.

The remarkable discovery has been made of a fossil scorpion in the Upper Silurian (Ludlow) of the island of Gotland. The specimen is well preserved and shows clearly the delicate brown or yellowish-brown chitinous cuticle, compressed and wrinkled by the pressure of overlying beds; the cephalothorax, the abdomen with seven dorsal plates, and the tail composed of six segments, of which the last contracts and becomes pointed to form the poison-dart. The sculpture of the surface is exactly as in recent scorpions, and consists of tubercles and longitudinal ridges. One of the stigmata is visible on the right side, proving clearly that the animal respired air, as, indeed, its whole organization demonstrates that it lived upon dry land.

In this scorpion, named *Palærophonus nuncius* by MM. Torell and Lindström, we have therefore the most ancient known terrestrial animal; the dragon-flies, which hitherto claim the highest antiquity, having been found in the Devonian strata of Canada.

In the construction of this scorpion a very important feature is observable, furnished by the four pairs of thoracic legs, which are stout and pointed like those of the embryos of many other Tracheata, and of forms like *Campodea*. This form of leg no longer exists in the fossil scorpions of the Carboniferous formation, in which those appendages resemble those of living scorpions.—*Comptes Rendus*, December 1, 1884, p. 984.

[Dr. Hinde has kindly informed us that, according to letters received by him from Dr. Lindström, a fossil scorpion was obtained last year by Dr. Hunter, of Carlisle, from the Upper Ludlow beds of Lesmahago, in Lanarkshire. The specimen was sent to Mr. B. N. Peach in Edinburgh, but owing to that gentleman's ill-health he was unable to do anything with it, until the receipt of a photograph from Dr. Lindström showed that the Scotch and Swedish specimens agreed so closely that they might well be referred to the same species, certainly to the same genus. Dr. Lindström's example shows the dorsal surface of the animal, Dr. Hunter's the ventral surface; the latter is a female, while the Swedish specimen is inferred to be probably a male.]